Republic of Kenya

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KS 326-12 (2012) (English): Edible fats and oils — Specification, Part 12: Palm stearin (Draft Standard)

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DRAFT KENYA STANDARD **DKS 326-12: 2012**

ICS 67.200.10

Edible fats and oils — Specification

Part 12:

Palm stearin

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TECHNICAL COMMITTEE REPRESENTATION

The following organizations were represented on the Technical Committee:

Government Chemist Department
Kenya Industrial Research Development Institute
Jomo Kenyatta University of Science and Technology
Bidco Oils Refineries
Department of Public health., MOPHS
Division of Nutrition – MOMS
Unilever (K) Ltd
Kapa Oils refineries
Pwani Oils refineries
Kenyatta National hospital – Department of Nutrition
Consumer Information Network
Ministry of Industrialization — Department of Industry
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Bio Food Products
Trufood Ltd.
Kenya Bureau of Standards — Secretariat

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Foreword

This Draft Kenya Standard was revised by the Technical Committee on Edible Oils and Fats under the guidance of the Standards Project Committee, and it is in accordance with the procedures of the Kenya Bureau of Standards.

Palm stearin is the more solid fraction obtained by fractionation of palm oil after crystallization at a controlled temperature. It is thus a co-product of palm olein.

The physical characteristics of stearin differ significantly from those of palm oil and it is available in a wider range of fatty acid and triglyceride compositions.

It is a very useful source of fully natural hard fat component for products such as shortenings, pastry margarines, vanaspati, etc. Most of it is imported from Malaysia and Indonesia.

The standard gives guideline identity characteristics, quality requirements, for both crude and processed palm stearin products.

In the preparation of this standard, reference was made to the following documents:

Codex Stan 210 – 1999: Codex standard for named vegetable oils.

MS 816:1983 Malaysian Standard, Specification for palm olein.

IS 8361F – 1977 Indian Standard, Specification for palm olein.

Vegetable Oils in Food Technology, Frank D. Gunstone, CRC Press.

Pocketbook of palm oil uses by Palm Oil Research Institute of Malaysia.

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Acknowledgement is hereby made for the assistance derived from these sources.

Palm stearin — Specification

1 Scope

This Kenya standard prescribes the quality requirements for crude and processed palm stearin.

2 Normative references

KS 1500, Code of practice for hygiene in the food and drink manufacturing industry

KS 327 Method of sampling and test for edible oils and fats

KS EAS 38 Labelling of pre-packaged foods

KS ISO 662 Animal and vegetable fats and oils — Determination of moisture and volatile matter contents

KS ISO 3960 Animal and vegetable fats and oils – Determination of peroxide value

KS ISO 15304 Animal and vegetable fats and oils – Determination of the content of trans fatty acid isomers of vegetable fats & oils – Gas Chromatographic method

ISO 3961 Animal and vegetable fats and oils -- Determination of iodine value

3 Terms and definitions

For the purposes of this standard, the following definitions shall apply:

3.1
crude palm stearin

Crude palm stearin is the high-melting fraction obtained by fractionation of crude palm oil

3.2
neutralized palm stearin

neutralized palm stearin is the high-melting fractionation obtained by fractionation either from neutralized palm oil or from crude palm oil and subsequently neutralize with alkali

3.3
neutralized palm stearin

neutralized, bleached palm stearin is the high-melting fractionation obtained by a fraction either from neutralized and bleached palm oil, or from crude palm oil and subsequently neutralized with alkali and bleached with bleaching earth, or from neutralized palm oil and subsequently bleached with bleaching earth

3.4
refined, bleached and deodorized (including neutralized, bleached and deodorized) palm stearin

this is the high-melting fraction obtained by fractionation either from refined, bleached and deodorized palm oil, or from crude or semi-refined palm oil, subsequently refined by neutralization with alkali, bleached with bleaching earth or activated carbon or both and deodorized with steam or alternatively bleached, deacidified and deodorized by physical means

4 Identity characteristics

The guidelines of the identity characteristics for crude palm stearin are given in Table 1.

Table 1 — Guideline identity characteristics of palm stearin

Characteristics	Crude stearin range
Relative density 60°C/water at 20°C	0.881 – 0.891
Refractive index, ND 60°C	1.447 – 1.451
Saponification value, mgKOH/g oil	193 – 205
Unsaponifiable matter, g/kg	≤ 9
Fatty acid composition (wt% as methyl esters)	
C 12:0	0.05 – 0.5
C 14:0	1. – 2
C 16:0	48 – 74
C 16:1	0.05 – 0.2
C 18:0	3.9 – 6
C 18:1	15.5 – 36.0
C 18:2	3 – 10
C 18:3	0.05 – 0.5
C 20:0	0.05 – 1
Iodine value (wijs)	21– 48
Slip point 0°C	44 – 58

5 Quality requirements

5.1 General characteristic requirements

5.1.1 Colour

The colour of crude or neutralized palm stearin shall be bright clear and orange yellow at 55°C to 70°C. The colour of neutralized bleached palm stearin shall be bright clear and reddish yellow at 55°C to 70°C while that for refined, bleached and deodorized palm stearin shall be bright clear and very pale yellow at 55°C to 70°C.

5.1.2 Odour and taste

All palm stearin products shall be free from foreign rancid odour and taste.

5.2 Quality requirements
When tested in accordance with KS 05-327 or the referred ISO standards palm stearin products shall conform to the quality requirements stipulated in Table 2.

Table 2 — Quality requirements for palm stearin products

Parameter	**Product requirements**				
	Crude	**Neutralized**	**Neutralized bleached palm stearin**	**Refined bleached and deodorized/neutralized bleached and deodorized**	**Method of Test**
Free fatty acid (as palmitic), %	≥ 2.5	≤ 0.25	≤ 0.25	≤0.25	KS ISO 15304
Moisture and impurities, % max.	0.25	0.15	0.15	0.15	KS ISO 662
Iodine value (wijs), max.	21– 48	21– 48	21– 48	21– 48	ISO 3961
Slip point, °C (min.)	44 – 58	44 – 58	44 – 58	44 – 58	KS 327
Peroxide value, mEg/kg, max.	-	-	-	10	KS ISO 3960
Colour, 133.35 mm (5¼ in lovibond,	≥ 20R	≥ 20R	> 6 ≤ 20R	≤ 6R	KS 327
Total carotenoids mg/kg (as *β* carotene)	300 – 600	-	-	-	KS 327

6 Hygiene

Palm stearin shall be processed in licensed premises complying with the hygienic requirements stipulated in KS 05-1500, the Public Health Act, Cap. 242 and the Food, Drugs and Chemical Substances Act, Cap. 254 of the Laws of Kenya.

7 Packaging

Palm stearin products shall be packed in suitable food grade containers, which protect the products from any possible contamination and/or tampering.

8 Labelling

The containers shall be labelled in accordance with the provisions stipulated in KS EAS 38 in addition to the following:

a) the name of the product shall be specific to the category as indicated in table 2;

b) the weight of the product,

c) the producer’s name, physical location and address,

d) the month and year of manufacture or batch code,

e) the list of ingredients in the case of processed products,

f) sell by date,

g) storage conditions,

h) the country of origin,

9 Sampling

9.1 Sampling of palm stearin products for the purpose of testing shall be done in accordance with the method prescribed in KS ISO 5555[4)].

9.2 Any package/container drawn randomly from a lot/batch shall constitute a representative sample of that lot or batch.

10 Testing

Tests shall be carried out in accordance with the methods prescribed in KS 05-327 and any other relevant Kenya Standards.

[4)] Animal and vegetable fats and oils — Sampling.